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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,818	11/16/2001	Masahiko Matsuura	44318	7649

7590 10/20/2003
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WASHINGTON, DC 20005-3096

EXAMINER

AWAD, AMR A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,818

Applicant(s)

MATSUURA ET AL.

Examiner

Amr Awad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,8 and 10-36 is/are rejected.
- 7) ☒ Claim(s) 3-7 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The references cited in the Information Disclosure Statement filed On February 8, 2002 have been considered by the Examiner; see attached PTO-1449.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

5. Claims 1, 3, 8, 11, 16, 21 and 29 are objected to because of the following informalities: all these claims include the term "the cell (s)" which is not the same as the previously introduced term "cells". It is therefore suggested by the Examiner that this term should be changed to --the cells-- Appropriate correction is required.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-2, 8, 10 and 11-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 of U.S.

Patent No. 6,377,757 (Pat_757) in view of Evans (US Patent NO. 3,612,758).

By comparing claim 1 of the present application to claim 1 of Pat_757, we can see that the two claims are substantially similar. For example, the limitation "providing a reversible image display medium" in the present application is equivalent to the limitation "preparing a reversible image display medium" of Pat_757. The limitation "two substrates opposed to each other with a gap therebetween" in the present application is equivalent to the limitation "two sheets opposed to each other with a predetermined gap therebetween" of Pat_757. The limitations "one or more developer accommodating cells formed between two substrates (sheets)..." and "a dry developer contained in each of the cell (s)..." are almost the same in both claims. The limitation "displaying an image by driving the frictionally charges developing particles..." of the present application is

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similar to "displaying an image by forming a predetermined electro-static field..." because "driving" simply means providing electric field. Claim 1 of Pat_757 does not show that the strength of the electric field to be applied to the developer is $0.3 \text{ V}/\mu\text{m}$ to $3.0 \text{ V}/\mu\text{m}$.

However, Evans teaches a color display device employing electrophoretic migration of color pigment particles to form an image display panel (abstract). Evans also teaches that the field necessary for particle migration is small (on the order of $0.5 \text{ V}/\text{micron}$) (col. 5, lines 40-50), which is well within the range recited in claim 1 of the present application.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Evans to be incorporated to the teaching of claim 1 of Pat_757 to reach the claimed limitations of claimed 1 in the present application, so as motivated by Evans, to reduced the required electric field (col. 5, lines 48-50), and therefore, reducing the power used in the display device.

As to independent claim 8, the claim is similar to claim 1 above, except that claim 8 recites charging the surface of the image display medium. Evans teaches applying potential between 6-600 volts (col. 6, lines 43-60).

As to independent claim 11, the claim recites initializing the reversible image display medium by stirring the developer, which is recited in claims 1-2 of Pat_757. The claim also recites that the particles having different chargeable polarities which is clearly taught by Evans (Figs. 2a-2c).

As to independent claim 16, the claim is an apparatus similar to the method of claim 11 above, and corresponds to apparatus of claim 24 in Pat_757, and as can be seen above, the opposite polarities of the particles is taught by Evans.

As to independent claims 21 and 29, the claims are similar to claim 8 considering that the magnetic field is field created when an electric field is present. Therefore, having an electric field as recited in claim 1 of Pat_757 would show the obviousness of having magnetic field.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-2, 11-21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan (US patent NO. 4,143,103 provided by the Applicant) in view of Evans (US Patent NO. 3,612,758).

As to claim 1, Sheridan (figures 1, 2 & 2A) teaches A method for displaying an image, comprising the steps of:

Providing a reversible image display medium comprising; two substrates (6 & 8) opposed to each other with a gap therebetween; one or more developer accommodating cells formed between the two substrates (col. 3, lines 14-26); and a dry developer (15) contained in each of the cell(s), the dry developer containing at least two

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kinds of frictionally chargeable dry developing particles (14) having different chargeable polarities and different optical reflection densities (col. 3, lines 42-68); and displaying an image by driving the frictionally charged developing particles having different chargeable polarities in an electrostatic field corresponding to the image to be displayed (figure 2 and col. 4, lines 6-21).

Sheridon does not expressly teach that in the image display step, strength of the electric field to be applied to the developer is 0.3 V/ μ m to 3.0 V/ μ m. Sheridan does not teach having a periphery surrounded by a partition wall; and a dry developer contained in each of the cell(s)

However, Evans teaches a color display device employing electrophoretic migration of color pigment particles to form an image display panel (abstract). Evans also teaches that the field necessary for particle migration is small (on the order of 0.5 V/ μ m) (col. 5, lines 40-50), which is well within the range recited in claim 1 of the present application. Evans (figure 1) teaches having a periphery surrounded by a partition wall (insulating material 13); and a dry developer contained in each of the cell(s) (col. 3, lines 22-24).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Evans to be incorporated to Sheridan's device to reach the claimed limitations of claimed 1 in the present application, so as motivated by Evans, to reduced the required electric field (col. 5, lines 48-50), and therefore, reducing the power used in the display device. It would have been also obvious to include the teaching of Evans having partitioning to be

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incorporated to Sheridan's device so as motivated by Evans, to be able to withstand the etching agents (col. 3, lines 23-24).

As to claim 2, Sheridan teaches that magnetic particles can be used (col. 5, lines 10-14).

As to independent claim 11, the claim is similar to claim 1 above except that claim 11 does not recite the value of the static electric field.

As to claim 12, Sheridan teaches using alternating field (col. 4, lines 7-14).

As to claim 13, the claim recites a value similar to the value recited in claim 1, which as seen above, taught by Evans.

As to claims 14-15, the claims recite a frequency values for the device. However, such values do not emphasize any significant as what would be the benefit from applying such values. Therefore, examiner asserts that such values are based on the design of the device and provide no specific improvements.

As to claims 16-20, the claim is substantially similar to independent claims 11-15 and would be analyzed as previously discussed.

As to claim 21, the claim is substantially similar to claim 11 above, except that the claim recites having magnetic field, which as shown above with respect to claim 2, taught by Sheridan.

As to claim 29, the claim is an apparatus claim corresponds to the method of claim 21 and would be analyzed as previously discussed with respect to claim 21.

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10. Claims 8, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan in view of Moore (US patent NO. 6,611,100).

As to independent claim 8, Sheridan (figures 1, 2 & 2A) teaches a method for displaying an image, comprising the steps of:

Providing a reversible image display medium comprising; two substrates (6 & 8) opposed to each other with a gap therebetween; one or more developer accommodating cells formed between the two substrates (col. 3, lines 14-26); and a dry developer (15) contained in each of the cell(s), the dry developer containing at least two kinds of frictionally chargeable dry developing particles (14) having different chargeable polarities and different optical reflection densities (col. 3, lines 42-68); and displaying an image by driving the frictionally charged developing particles having different chargeable polarities in an electrostatic field corresponding to the image to be displayed (figure 2 and col. 4, lines 6-21).

Sheridon does not teach having a periphery surrounded by a partition wall; and a dry developer contained in each of the cell(s). Sheridan does not teach having a holding potential to hold the displayed image after the completion of application of electrostatic field.

However, Moore (figure 3) teaches an electrophoretic display that includes partitions (walls 68) and wherein a holding potential is being used to the displayed images (col. 5, lines 41-53).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Moore having partitioning to be

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applied to Sheridan's device so as to be able to control the flowing of electric field and therefore, providing accurate and superior grayscale characteristics without using complicated structure. It would have been also obvious to use a holding potential as taught by Moore, so as to be able to maintain the displayed images without deterioration in the quality of the display.

As to claim 10, from Moore's figure 4, it is apparent that the holding potential is lower than 100V because as described by Moore, the writing voltage is reaching to zero which means that the holding voltage is within the claimed value.

Allowable Subject Matter

11. Claims 3-7 and 9 would be allowed if the objection indicated above, would be overcome.

12. Claims 22-28 and 30-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if the double patenting rejection is overcome.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ando et al. (US patent NO. 4,168,974) teaches an ion modulation image involves prior uniform charging of secondary recording surface and charge control thereof.

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Berstis (US patent NO. 6,518,948) teaches a multichromical twisting ball displays.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday-Friday, between 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras can be reached on (703)305-9720. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4750.

A handwritten signature in black ink, appearing to read "Amr Awad", with a stylized flourish at the end.

A.A.